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This report summarizes a study conducted by the South Carolina Forestry Commission on this Asian market during the second half of 2015, and it is intended to help the U.S. Southern states' forest products sector (producers, manufacturers, traders and policy-makers) in examining and preparing for the opportunities this market may offer, by providing them with detailed information on India's economics, wood fiber network, trade flows and international contacts. This document should be used as a reference, and in conjunction with primary market information from key forestry organizations, to help formulate strategies to participate in the Indian market. The South Carolina Forestry Commission will not be held liable for misuse or misinterpretation of information within this document.





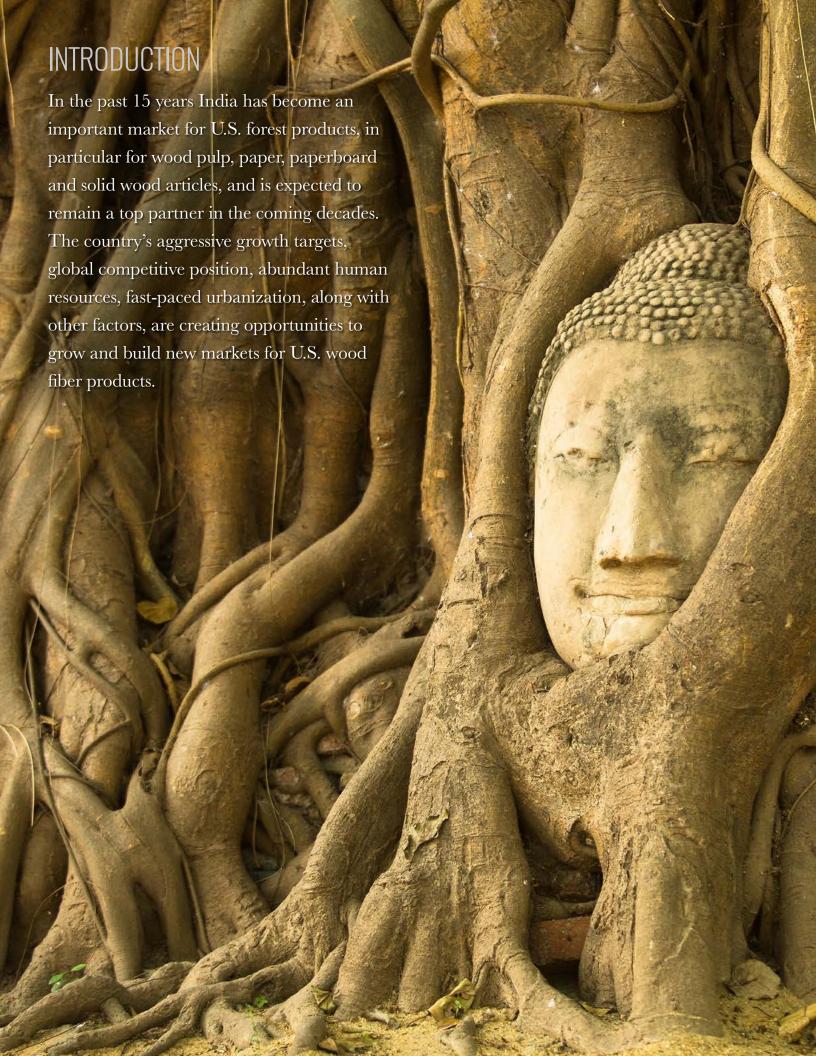












COUNTRY OVERVIEW

Economic factors

POPULATION

With 1.31 billion inhabitants, India is currently the world's second most populous country, and is expected to surpass China as the country with the largest population by reaching 1.7 billion inhabitants in 2050¹.

In 2015, the majority of India's population (62.3%) is within 15 and 59 years old¹, which positions the country to have "...the largest and youngest workforce the world has ever seen" as the rest of the world's biggest economies are aging², representing an opportunity for economic and social development, as long as this human capital is developed with skills, training and job opportunities².

Its middle class is also set to become the world's largest middle class consumer market by 2030, which is projected to grow by 1 billion through 2039³. This remarkable growth in combination with a massive rural to urban migration estimated at 10 million people every year⁴, have put investments in housing and infrastructure among the country's main priorities⁵.

GDP GROWTH

With the world's fourth largest economy, India's Gross Domestic Product (GDP) in 2014 was \$2.067 trillion⁶, which represented a growth of 7.4% compared to 2013, and is expected to continue growing between 7.5% and

8.0% per year the next three years⁷, achieving the fastest growth in South Asia, and sixth-seventh worldwide⁸.

Moreover, the country has been among the top 10% of the world's countries with the fastest economic growth since 19919, thanks mostly to the services sector, which accounted for 65% of the GDP in 2012, followed by industry and agriculture with shares of GDP of 20% and 14% respectively, in 2012¹⁰.

CONSTRUCTION MARKET

Within the industrial sector, construction appears to be the main driver of growth, with a share of 11% of India's GDP. This industry provides jobs to 35 million people, and its total market size is estimated at 126 million USD, 50% of which is driven by the infrastructure sector, and the rest by industrial, commercial and residential development¹¹. Moreover, India is expected to become the world's third largest global construction market in 2030, and the fastest growing as well¹².

India is in the process of developing a housing start indicator and the only available data correspond to a pilot study published in February 2014, which corresponds to historical records of selected cities for 12 quarters from Q1:2009 to Q4:2011¹³. According to the pilot report named "Trends in new construction of residential housing during 2009-2011 in 27 cities across India," housing starts grew from 25,533.00 in the first quarter of 2009 to 57,768.00 in the fourth quarter of 2011, which corresponded to a total growth of 169% and an average yearly growth of 6.8%.



Pakistan

Uttar Production

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Uttar Production

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Figure 1. India's Distribution of Forest Cover by State and Union Territory

During this period, 49% of new construction permits were granted for single housing units, and 51% to multiple housing units.

Solid wood products have not been historically predominant in Indian construction: according to the country's 2011 census, the use of wood, bamboo and other materials on flooring was observed in only 3.4% of the households at that time¹⁴.

Similarly for wall and roof construction, wood and other materials only accounted for 5.4% and 15.58% respectively. The materials most widely used in flooring, walls and roofing were mud (46.5%), burnt bricks (47.5%), and concrete (29.0%) respectively, which are traditionally seen as materials of higher quality than wood, especially for structural applications¹⁵.

However, the country's middle class growth along with rising incomes seem to be changing these views and consumption patterns in favor of imported hardwood and softwood lumber varieties for applications in building projects, particularly for finishing and furniture uses¹⁶. This context in combination with India's latest reforms to its foreign direct investment norms for the construction sector¹⁷, is expected to boost the housing markets and imports of wood products such as plywood¹⁸.

FOREST PROFILE

Administrative division

The country's administrative division consists of 29 states and 7 union territories (UT)¹⁹. The top five states and UT in forest cover area are: Madhya Pradesh (19.2 million acres), Arunachal Pradesh (16.6 million ac), Chhattisgarh (13.7 million ac), Maharashtra (12.5 million ac) and Odisha (12.4 million ac). The states of Arunachal Pradesh and Maharashtra comprise the largest areas of the country's very dense forest. Figure 1 provides a visual representation of the distribution of forest cover by state and union territory.

Forest cover

Just as it has been observed in many developing countries, India's aggressive pursuit of economic growth and its integration into the global economy have caused accelerated deterioration of its natural environment²⁰.

Deforestation and forest degradation have become a threat to the country's rich biodiversity and the subsistence of millions in rural areas who depend on fuel wood to meet domestic energy needs^{21, 22}, hence the importance

of monitoring the state of forests. The Forest Survey of India (FSI), an entity under the Ministry of Environment & Forests, Government of India, is responsible for assessing the country's forestry and tree resources²³. Every two years, FSI publishes the "India State of Forest Report" (ISFR), with the results of the forest cover assessment and tree cover estimation, as well as growing stock, carbon stock, and other information based on National Forest Inventory (NFI). The adequacy of India's monitoring and reporting systems to meet national and international requirements has been questioned in a recent study²⁴, which argues that area under forests may be potentially over-reported by including non-forest tree categories; therefore data supplied by FSI has been included in this report for reference only, and should be used with caution by readers.

India's total forest cover in 2013 was 172.5 million ac, which corresponds to 21.2% of the country's geographical area, and represented a slight increase of 1.5 million ac (0.84%) from 2011²⁵. This gave India a score of 35.7 out of 100 in Yale University's 2014 Environmental Performance Index for Forests, ranking it in 57th place out of 137 countries included in the study²⁶.

Historic data indicate that from 1989 through 1997, India's forest cover decreased at an average rate of 0.27% per year, however, from 1999 through 2013 the same grew at an average of 1.41% per year, as a result of conservation measures implemented by the country's government. Most of the forest cover (46%) presents a moderate canopy density (40% to 70%), whereas 42% of the forest cover has a tree density between 10% and 40%. Only 12% of the country's forest cover is considered very dense (canopy density of 70%+).

Growing stock

The estimated volume of trees (growing stock, as defined by FAO27) reported for India in 2013 was 5,658.0 million m3, which represented a decrease of 389.1 million m3 (6.43 %) from 2011. According to the Forest Survey of

India, this was caused by the loss of moderately dense forest and harvesting of mature tree crops outside the forest area (TOF).

Almost three quarters of the country's growing stock (4,173.6 million m3, 73.8%) is located in recorded forest areas, and the remaining quarter in TOF areas (1,484.7 million m3, 26.2%). The forest areas with maximum growing stock are located in the western and eastern Himalayas regions, (north and northeast of the country respectively), and in the East Deccan region (east of the country).

The top three states in growing stock were: Arunachal Pradesh, Uttarakhand and Chhattisgarh, which accounted for 9.3%, 8.7% and 7.5% of the total growing stock respectively.

Agroforestry system

As of 2003, it is estimated that approximately 50% of India's wood fiber supply comes from non-forest resources²⁸. The other half of supply is provided by imports and local public forests and forest plantations²⁸.

The Indian agroforestry system consists of plantations within the TOF, and represents only a small fraction of the country's geographical area and growing stock, but its study may reveal some of the trends of the wood market. It accounts for 3.4% of the country's geographical area (27.6 million ac), and most of the tree cover is located in the West Coast (3.3 million ac), East Deccan (3.1 million ac) and Eastern Plain (2.4 million ac).

The estimated total volume of wood available in the agroforestry system of the country is 1,022.85 million m3. The top three states in growing stock within the agroforestry system are Maharashtra, Andhra Pradesh and Gujarat. Mangifera indica (common name Aam) is the species with highest growing stock within India's agroforestry system (13.3%), and it is followed by Azadirachta indica (6.76%) and Borassus flabelliformis, two of which belong to the mahogany family²⁵.

Table 1. India's Consumption of Forest Products in 2014

Year	Item Category	Unit	Production	Import Quantity	Export Quantity	Consumption
2014	Industrial RoundWood	m3	49,517,000	595,336	476	50,111,860
2014	Other Fibre	tonnes	1,995,300	21,029	491	2,015,838
2014	Paper and Paperboard	tonnes	10,247,000	2,400,537	631,966	12,015,571
2014	Recovered Paper	tonnes	2,640,000	3,068,949	123	5,708,826
2014	Sawnwood	m3	6,889,000	551,570	79,183	7,361,387
2014	Wood Fuel	m3	307,172,633	113	198	307,172,548
2014	Wood Panels	m3	3,125,700	762,330	82,942	3,805,088
2014	Wood Pulp	tonnes	2,307,600	1,1593,00	5178	346,172

FOREST PRODUCTS

Overview

Most of India's needs for forest products consist of industrial wood products, non-timber forest products and fuelwood¹⁵. Other major forest products sectors are: sawnwood products, wood-based panels, wood pulp, paper and paperboard products.

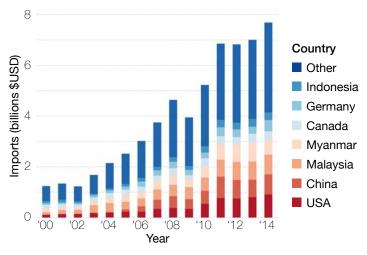
Estimated consumption of industrial roundwood products in 2014 amounted to 50.1 million m3, which includes: sawlogs and veneer logs, pulpwood and other industrial roundwood. Approximately 98.8% of supply for both India's domestic demand and exports of this commodity came from local production, and the rest from imports²⁹. There is not an exact estimation of the country's consumption of fuelwood³⁰, but according to FAO's assessment, India consumed approximately 307.2 million m3 in 2014 as well. This positioned the country as the world's major producer and consumer of fuelwood that year. Table 1 provides a summary of production and consumption of major forest products sectors in India in 2014.

Imports

India's import of forest products amounted to \$7.7 billion in 2014, which represented 1.7% of imports of all commodities in that year, positioning this sector in seventh place of importance for the country's economy, between natural gas and cellular telephones³¹.

The inflow of forest products from suppliers abroad has experienced a total growth of 515.2% in the last 15 years (Figure 2), from \$1.25 billion in 2000 to 7.69 billion in 2014³¹, as a result of the shortage of domestic timber resources, governmental restrictions of forestry development, and the country's strategy to develop its secondary industry^{15, 16}. As depicted in Figure 2, the

Figure 2. India's Total Forest Products Import by Country: 2000-2014 (billion USD)



growth in India's consumption of forest products from international markets has remained positive for the past 15 years, with an exception between 2008 and 2009, when imports fell by \$0.7 billion, from \$4.6 to \$3.9 billion, mostly due to the global economic recession.

The U.S. has become one of India's key trading partners of forest products: by 2000, the country was already positioned among the top three exporters of forest products to India, and since 2012 it has remained in first place, closely followed by China and Malaysia (Figure 2). Between 2009 and 2014, forest products export from the U.S. to India increased from \$343.1 million to \$913.3 million, for a total growth of 167%. Similarly, China and Malaysia grew \$408.4 million to \$786.0 million (108.2%) and \$304.4 million to \$780.7 (63.9%) during this period respectively. Together with Myanmar, Germany and Canada, these six countries accounted for almost half of India's total forest products imports in 2014. A total of 147 countries exported their forest products into India that year.

For the purpose of this report, forest products have been grouped into six categories (or sectors): solid wood products, wood pulp products, paper and paperboard



products, wood furniture, wood-based chemicals, and pulp and paper manufacturing equipment. These categories are based on the Harmonized Description and Coding System³² established and maintained by the World Customs Organization³³.

According to data from the United Nations' Statistic Division, most of India's import of forest products in the last fifteen years, corresponded to solid wood products, paper and paperboard products, and wood pulp. Between 2000 and 2014, these three commodity groups accounted in average for more than 88% of the country's forest products imports per year (Figure 3).

Through 2014, India imported \$2.7 billion of solid wood products, which represented 35% of the total value of forest products exports for the year; whereas imports of paper and paperboard products and wood pulp amounted to \$2.6 billion (34%) and \$1.7 billion respectively (22%); thereby leading to a combined total of 91% of the imports for that year. Wood furniture, paper/pulp manufacturing machinery and wood-based chemicals accounted for 4%, 4% and 1%, respectively, of India's forest products imports in 2014 as well.

Figure 4 depicts the distribution of India's forest products import by commodity and country of origin in 2014: the columns correspond to countries, the rows to product categories, and the color coding to the strength relationship between both (i.e. darker colors for countries with higher participation of imports for a given commodity). From this chart, it can be observed that in 2014, 25% of India's solid wood products imports came from Malaysia, 21% from Myanmar, 5% from China and 49% from other countries. Imports of paper and paperboard products were distributed as following: 15% from China, 10% from the U.S., 8% from Canada and 67% from other countries. Wood pulp – the third commodity in importance – was supplied mainly from the U.S. (34%), Canada (9%) and Malaysia (3%); whereas other countries supplied the remaining 54%. The following sections provide further details on the top three forest products categories imported by India.

Figure 3. India's Total Forest Products Imports
By Commodity: 2000-2014 (billion USD)

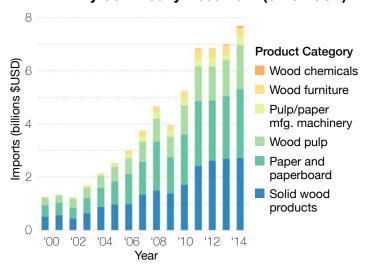
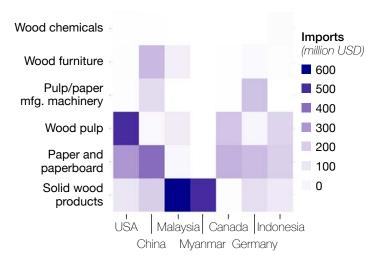


Figure 4. India's 2014 Forest Products Import by Commodity and Country



SOLID WOOD PRODUCTS

India's import of solid wood products has grown at an average rate of \$179 million per year in the last 15 years, reaching a total of \$2.7 billion in 2014, mostly driven by the country's demand for logs (Table 2). Between 2000 and 2014, this commodity accounted for 81% of all solid wood products into India, amounting to \$2 billion in 2014, which

Table 2. India's Import of Solid Wood Products: 2005-2014 (million USD)

Commodity	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Logs	469.2	511.2	377.8	581.9	802.9	843.1	820	1115	1281.4	1137.3	1337.4	1836.5	2011.4	2032.5	2007
Lumber	3	11.4	8.4	7.2	16.7	21	21.5	22.7	32.8	40.1	57.3	131.4	160.3	185.1	205.5
Veneer	2.3	2.5	3.2	3.3	4.9	9.5	13.2	15.7	23	20	27	46.1	56	66	91.4
Fiberboard	7.8	10.1	9.5	12.3	15.7	25.6	32	51.8	13.1	40.4	77.2	84.5	92.1	96.2	87.6
Plywood	5	4.5	3.8	3.9	4.7	7.5	11.7	23.5	31.5	36.6	52.3	113.6	90	80.9	85.4
Wood Fuel	0.3	0.2	0.1	0.5	1	1.5	1.6	2.4	4.4	4.7	2	1.4	1.6	41.9	65.8
Other	11.4	13.9	13.4	18.5	28.8	50	70.2	96.7	92.7	93.2	144.5	197.4	195.2	177.6	160.9

included tropical species of Teak and Meranti and softwood species of pine. Malaysia and Myanmar – the major log exporters into India – accounted for 25% and 21% of all solid wood imports in 2014, respectively (Figure 5). The United States' share of India's import in 2014 was 2% only. Lumber, veneer, fiberboard and other products

represented 26% of imports of solid wood products in 2014, growing 12% from 2005. Figure 6 depicts India's imports of solid wood products except logs.

The top four commodities in 2014 within this subgroup corresponded to lumber, veneer, fiberboard and plywood, with imports of \$205.5, \$91.4, \$87.6 and \$85.4 million respectively. Among these commodities, lumber has experienced the most remarkable growth in the past 6 years: 413% from 2009 to 2014, most of it coming from Germany, Indonesia, Tanzania and the U.S. (21%, 13%, 10% and 10%, respectively in 2014).

PAPER AND PAPERBOARD PRODUCTS

India imported \$2.6 billion in paper and paperboard products in 2014, which represented 34% of the country's forest products imports in that year, and placed this category in second place of importance after solid wood products.

Six top trading partners accounted for more than half (55%) of this figure: China, the U.S., South Korea, Canada, Germany and Russia (Figure 7). The first three countries represented 15%, 10% and 10% of India's paper and paperboard imports in 2014 respectively. Both China and the U.S. have been alternating first and second place since 2010, followed closely by South Korea and Canada.

Most of the country's demand of paper and paperboard products corresponds to five products: newsprint, paper and paperboard coated with kaolin, uncoated writing paper, Kraft paper and other types of coated paper. The distribution of imports by product since 2000 is provided in Table 3. Canada, South Korea and Russia are India's main suppliers of newsprint, whereas most paper and

Figure 5. India's Import of Solid Wood Products by Trading Partner: 2000-2014 (billion USD)

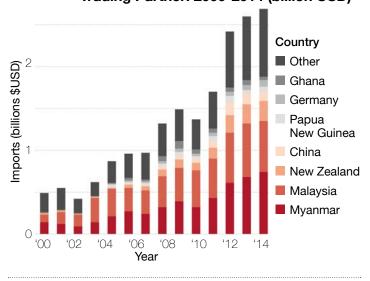
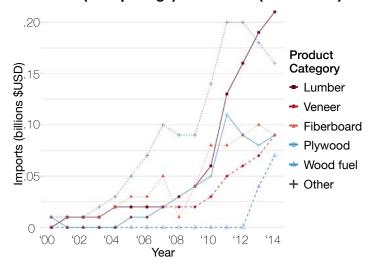


Figure 6. India's Import of Solid Wood Products (Except Logs): 2000-2014 (billion USD)



paperboard coated with kaolin comes from China. China is the main supplier of other coated paper and paperboard products, along with the U.S. and Germany. Finally, most of the uncoated writing paper is supplied by Germany and Russia, whereas the U.S. is the main supplier of Kraft paper.

Table 3. India's Import of Paper and Paperboard Products by Commodity: 2000-2014 (million USD)

Commodity	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013 2014
Newsprint	239.8	278.6	230.5	304.2	391.4	418.4	536.3	505.5	890.6	441.8	771.5	1014.4	831.2	888.7 841.7
Paper,Coated	46.7	59.6	48.1	70.9	87.2	127.7	144.5	201.2	243	210	243.4	404.6	377.1	440.9 499.4
Kaolin														
Paper, Uncoated	66.3	31.4	22.4	47	70	106	185.2	205.5	265.2	288.3	289.8	313.5	287.5	342.2 489.3
Writing														
Other	84.6	98.3	109.4	148.6	157.8	221.7	268.6	330.3	448.6	428.5	582.7	722.3	771	693.1 779.7

WOOD PULP

This category has shown positive growth over the last 15 years, from \$280.9 million in 2000 to \$1.6 billion in 2014, with an average growth rate of 34.6% (\$97.1 million) per year. In 2014, the U.S. was the top exporter of wood pulp into India, accounting for 34.1% (\$565 million) of all the country's imports.

Canada, Sweden, Indonesia and the UEA were next in importance by supplying 8.9%, 7.4%, 6.4% and 4.7% of India's imports the same year. Almost half (45.1%) of this country's wood pulp imports in 2014 corresponded to waste paper, mainly provided by the U.S. India is currently on the world's top importer of this category.

U.S EXPORTS TO INDIA

Overview

India has become one of the top destinations for U.S. forest products in the last 12 years. Export to this country has grown consistently, from \$114.88 million in 2002, to \$873.58 million in 2014, for an average growth of \$69.3.6 million per year (60.3%).

By 2014 this country was sixth in import of U.S. forest products in general, and third in wood pulp. Furthermore, 69.57% of all U.S. forest products exports to India in that year corresponded to wood pulp and 21.70% to paper and paperboard products.

Solid wood products, furniture and other wood-based products accounted for the remaining 8.73%. Most of the wood pulp exported into India (67%) in 2014, was supplied by Minnesota, Georgia, New York and New Jersey. Similarly, the main state in exports of paper and paperboard into India the same year was Washington (22%).

Exports from the U.S. Southeast

The potential of India as a trade partner for U.S. forest products is observable also in the Southern states in particular.

Export from the region into India amounted to \$302.8 million in 2014, which represented 6% in growth since 2010 and placed India in 12th place of importance. Top three states – Georgia, South Carolina and Virginia – accounted for 77% of the region's export into India. Georgia alone drove 45.0% of this figure, whereas South Carolina and Virginia accounted for 20.8% and 11.3% respectively. These states have been the predominant

Figure 7. India's Import of Paper and Paperboard Products by Trading Partner: 2000-2014 (billion USD)

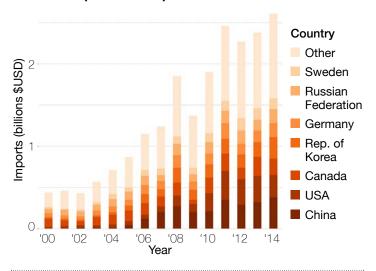
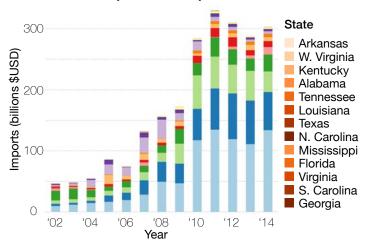


Figure 8. Export of Forest Products from the Southern US into India by State: 2002-2014 (million USD)



exporters from the region into India the last six years. Figure 8 shows the distribution of exports of U.S. forest products into India by state since 2002 (based on the U.S. Census Bureau's "Origin of Movement (OM)" state export series³⁴³⁵).

At the commodity level, the composition of export from the U.S. Southern region into India is similar to the national average. The top three commodities from the region are wood pulp, paper and paperboard and solid wood products, which in 2014 corresponded to 97.7% of the region's total forest products export into India. The majority of exports for that year consisted in wood pulp (64.57%, \$193 million), whereas paper and solid wood accounted for 18.7% (\$56.0 million) and 14.45% (\$43.3 million) respectively (see Figure 9).

Exports from South Carolina

South Carolina's forest products export in 2014 amounted to a record high of \$1.5 billion³⁶. The top three trading partners – China, Mexico and Canada – accounted for 7.9%, 7.7% and 7.7% respectively.

India's import of forest products from the state totaled \$64.1 million, which corresponded to 4.3% of the total for the year and ranked the country in eighth place of importance for this industry. This also represented a remarkable growth for the last 12 years, from \$3.6 million in 2002.

Year-over-year growth remained positive between 2002 and 2012, but a change in this trend has been observed in the last couple of years. In 2012 export of forest products from South Carolina reached a record of \$75.2 million, but fell to \$71.6 million in 2013 and to \$64.1 million in 2014.

The state's mix of forest products exported to India follows a similar distribution to that observed at the regional level: wood pulp, paper and paperboard, and solid wood products are currently top commodities, which account for 42.5%, 30.3% and 24.5% of export in 2014, respectively.

Moreover, when compared with other country's imports the same year, India occupied the seventh place in importance for wood pulp, 13th for paper and paperboard, and 2nd for solid wood products. Interestingly, both wood pulp and paper and paperboard have been top commodities in the last twelve years, but it was not until the last five years that solid wood products started gaining importance. This commodity grew from \$411 thousand in 2010, to \$15.7 million in 2014 (37.2% growth).

EXPORTS FROM INDIA

Overview

In the past five years, export of Indian forest products grew 35.5%, from 1.3 billion USD in 2010, to 2.0 billion USD in 2014.

The majority of forest products export in 2014 corresponded to paper products (54.6%, 1.1 billion USD), whereas exports of furniture and solid wood products accounted for 24.9% (508.9 million USD) and 17.3% (353.8 million USD) respectively, which placed these two commodities in second and third place in importance.

The market for Indian forest products is highly diverse: in

Figure 9. Export of Forest Products from the US Southern States into India by Commodity: 2002-2014 (Million USD)

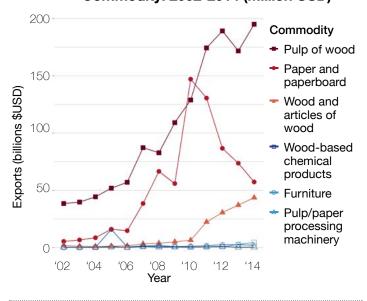
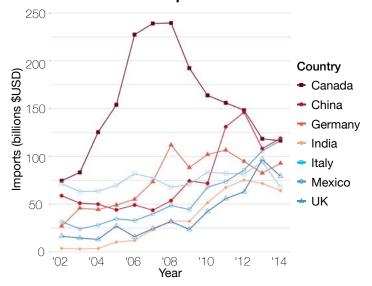


Figure 10. Exports of Forest Products from South Carolina to Top 8 Countries: 2002-2014



2014, the top six trading partners accounted for 46.7% of the total value of exports, whereas a group of 172 countries accounted for the remaining 53.3%. The U.S. was the main destination for forest products from India in this year, accounting for 19.2% of the total exports, which mainly consisted of furniture and solid wood products (wooden frames, packing/pallets, and others).

The second and third destinations for Indian forest products – the UAE and the UK – accounted for 7.12% and 6.47% of exports respectively, most of them corresponding to paper products.

RFFFRENCES

AND APPENDICES

- 1 United Nations. Department of Economic and Social Affairs. Popular Division, "World Population Prospects: The 2015 Revision, Key Findings and Advance Tables." p. 28, 2015.
- 2 Knowledge@Wharton, "India's Demographic Dividend: Asset of Liability?," 2013. [Online]. Available: http://knowledge.wharton.upenn.edu/article/indias-demographic-dividend-asset-or-liability/. [Accessed: 10-Dec-2015].
- 3 H. Kharas, "The Emerging Middle Class in Developing Countries," OECD Publishing, 2010.
- 4 The World Bank, "India," 2015. [Online]. Available: http://www.worldbank.org/en/country/india/overview. [Accessed: 10-Dec-2015].
- 5 American Hardwood Export Council, "Market Report: Africa, Middle East, South Asia, Oceania," pp. 1–6, Jul-2015.
- 6 The World Bank, "World Development Indicators 2015." Washington, DC, 2015.
- The World Bank, "Economy and Region Specific Forecasts and Data: Real GDP Growth (%) by Economy, Region, and Income Level (South Asia)," Global Economic Perspectives, 2015. [Online]. Available: http://www.worldbank.org/en/publication/global-economic-prospects/data?variable=NYGDPMKTPKDZ®ion=SAS. [Accessed: 10-Dec-2015].
- 8 The World Bank, "World DataBank: Global Economic Perspectives," Global Economic Perspectives, 2015. [Online]. Available: http://databank.worldbank.org/data/reports.aspx?source=global-economic-prospects#. [Accessed: 10-Dec-2015].
- 9 The World Bank, "Growth in India," Macroeconomics & Economic Growth in South Asia, 2013. [Online]. Available: http://go.worldbank.org/HSHFANI9U0. [Accessed: 28-Dec-2015].
- 10 J. Brar, S. Gupta, A. Madgavkar, B. C. Maitra, S. Rohra, and M. Sundar, "India's Economic Geography in 2025: States, Clusters and Cities. Identifying the High Potential Markets of Tomorrow," 2014.
- 11 Deloitte, "Infrastructure and Construction Sectors. Building the Nation," Deloitte, 2014.
- 12 GCP Global and Oxford Economics, "Global Construction 2030. A Global Forecast for the Construction Industry to 2030 (Executive Summary)," 2015.
- 13 Reserve Bank of India, "Pilot Housing Start Up Index Trends in New Construction of Residential Housing During 2009-2011 in 27 cities across India," 2014. [Online]. Available: https://www.rbi.org.in/scripts/BS_PressReleaseDisplay.aspx?prid=30539. [Accessed: 09-Aug-2015].
- 14 Census of India, "Construction Materials of Roof, Wall and Floor," CensusInfo India 2011, 2011. [Online]. Available: http://www.devinfolive.info/censusinfodashboard/. [Accessed: 09-Aug-2015].
- 15 I. Ganguly and I. Eastin, "Overview of the India Market for US Wood Products," Seattle, WA, 105, 2007.
- 16 D. Sood, "GAIN Report: Wood and Wood Products in 2014," New Delhi, 2014.
- 17 A. Behal, "India's FDI Reforms and The Growth Sectors to Wath Out For In 2016," Forbes Asia, 31-Dec-2015.
- 18 International Tropical Timber Organization, "Report from India," Trop. Timber Mark. Rep., vol. 19, no. 1, pp. 6–8, 2015.
- 19 Census of India, "Administrative Division," 2015. .
- 20 R. Haeuber, "Development and Deforestation: Indian Forestry in Perspective," J. Dev. Areas, vol. 27, no. 4, pp. 485–514, 1993.



- 21 J. Meenakshi and P. Pal Singh, "Tropical Deforestation and Forest Degradation: A Case Study from India," in XII World Forestry Congress, 2003.
- 22 A. Kumar Banerjee, "Decentralization and Devolution of Forest Management in Asia and the Pacific.," APFSOS/WP/21, 1993.
- 23 Forest Survey of India, "Brief History," 2015. [Online]. Available: http://www.fsi.nic.in/details.php?pgID=sb_1. [Accessed: 01-Jan-2015].
- 24 N. H. Ravindranath, I. K. Murthy, J. Priya, S. Upgupta, S. Mehra, and S. Nalin, "Forest Area Estimation and Reporting: Implications for Conservation, Management and REDD+," Curr. Sci., vol. 106, no. 9, pp. 1201–1206, 2014.
- 25 Forest Survey of India at Ministry of Environment & Forests, "India State of Forest Report 2013," Dehradun, 2013.
- 26 Yale Center for Environmental Law & Policy and The Center for International Earth Science Information Network (CIESIN) at Columbia University, "Environmental Performance Index. Country Profile: India," 2014. [Online]. Available: http://epi.yale.edu/epi/country-profile/india. [Accessed: 01-Jan-2015].
- 27 Food and Agriculture Organization of the United Nations, "India Global Forest Resources Assessment 2015 Country Report," 2015.
- 28 International Tropical Timber Organization, "India Country Profile," Status of Tropical Forest Management, 2005. [Online]. Available: http://www.itto.int/sfm_detail/id=12390000. [Accessed: 23-Dec-2015].
- 29 Food and Agriculture Organization of the United Nations, "FAOSTAT Database," Forestry Production and Trade, 2015. [Online]. Available: http://faostat3.fao.org/download/F/FO/E. [Accessed: 31-Dec-2015].
- 30 Food and Agriculture Organization of the United Nations, "FAO Yearbook of Forest Products 2013," Rome, 2015.
- 31 United Nations Department of Economic and Social Affairs Statistics Division, "DESA/UNSD, United Nations Comtrade database," 2015. [Online]. Available: http://comtrade.un.org/data/. [Accessed: 24-Sep-2015].
- 32 World Customs Organization, "What is the Harmonized System (HS)?," 2015. [Online]. Available: http://www.wcoomd.org/en/topics/nomenclature/overview/what-is-the-harmonized-system.aspx. [Accessed: 25-Sep-2015].
- 33 World Customs Organization, "WCO in Brief," 2015. [Online]. Available: http://www.wcoomd.org/en/about-us/what-is-the-wco.aspx. [Accessed: 25-Sep-2015].
- 34 U.S. Census Bureau, "USA Trade Online," State Export Data (Origin of Movement), 2015. [Online]. Available: https://usatrade.census.gov/. [Accessed: 04-Jan-2016].
- 35 U.S. Department of Commerce. International Trade Administration, "Data Notes of the Origin of Movement (OM) Series," 2005. [Online]. Available: http://www.trade.gov/mas/ian/tradeagreements/tg_ian_002036.asp. [Accessed: 04-Jan-2016].
- 36 E. Arias, "SC Forest Products Industry Export Report," South Carolina Forestry Commission. Economic Development, 2015. [Online]. Available: http://www.state.sc.us/forest/pubs/ForestProductsExportReport-FINAL. pdf. [Accessed: 07-Oct-2015].

Table 4. Forest Products Trade Organizations

Kandla Timber Association

Sector: Timber Industry in the port town of Kandla and its adjacent

areas

Address Line 1: Timber Bhavan Address Line 2: Plot No. 47, Sector-8 City/Town: Gandhidham, Kuth, Gujarat

Postal Code: 370201

Website: http://kandlatimber.org/?page_id=509

Federation of Indian Plywood & Panel Industry

Sector: Plywood and Wood Panels Address Line 1: 404, Vikrant Tower Address Line 2: 4, Rajendra Place

City/Town: New Delhi Postal Code: 110008

Phone: 91-11-25755649, 91-11-25862301

Fax: 91-11-25768639 email: fippi@fippi.org

Website: http://www.fippi.org/aboutus.htm

Indian Paper Manufacturers Association

Sector: Paper Manufacturing

Address Line 1: 4th Floor, PHD House Address Line 2: 4/2 Siri Institutional Area

City/Town: New Delhi Postal Code: 110016

Phone: 91-11-26518379, 91-11-41617188

Fax: 91-11-26518379 email: sg@ipma.co.in secretariat@ipma.co.in Website: http://ipma.co.in/

India Pulp and Paper Technical Association

Sector: Pulp, Paper, Newsprint and Allied Industries

Address Line 1: C.P.P.R.I. Campus Address Line 2: P.O.Box 47 City/Town: Saharanpur Postal Code: 247001 Phone: 91-13-2721904 Fax: 91-13-2726345

email: ipptaonline@ipptaonline.org Website: http://www.ipptaonline.org/

Association of Furniture Manufacturers and Traders

Sector: Furniture Industry

Address Line 1: Lakhi Industry House

Address Line 2: L.B.S Marg City/Town: Bhandup West, Mumbai

Postal Code: 400078 Phone: 91-22-3244 0508 Fax: 91-22-26256287 email: info@afmt.in

Website: http://www.afmt.in/

Builders Association of India

Sector: Engineering Construction Contractors & Builders

Address Line 1: G-1/G-20, Commerce Centre

Address Line 2: J. Dadajee Road City/Town: Tardeo, Mumbai Postal Code: 400034

Phone: 91-22-23514134, 91-22-23514802, 91-22 23520507

Fax: 91-22-23521328

email: baihq.mumbai@gmail.com Website: http://www.baionline.in/

Table 5. Major Woodworking Trade Fairs in India

Event	City, State	Country	Category	Date	Description
Indiawood http://www.indiaw	Bangalore, Karnataka vood.com	India	International	February, even years	Furniture Production Technology Woodworking Machinery Tools, fittings, Accesories Raw Materials Products
Delhiwood http://www.delhi-v	Greater Noida, Uttar Pradesh wood.com	India	International	February, odd years	Furniture Production Technology Woodworking Machinery Tools, fittings, Accesories Raw Materials Products
Mumbaiwood http://www.mumb	Goregaon, Mumbai pai-wood.com	India	International	October, odd years	Furniture Production Technology Woodworking Machinery Tools, fittings, Accesories Raw Materials Products
WoodTech India http://www.woodt	Chennai, Tamil Nadu techindia.in	India	International	August, yearly	Wood and Wood Products Woodworking Machinery Engineered Wood Products Furniture Hardware & Fittings Adhesives

PROGRAM

Expanded market opportunities encourage non-industrial forest landowners to exercise sound management practices on their land. Thanks to adequate markets and a favorable return on their timber investments, landowners will reinvest in establishing quality, well-stocked stands for future timber resources. New markets created through industrial and export development improve financial returns to landowners, retain working forests, enhance forest health, better protect water quality, and increase wood supply to retain and grow the forest industry and its



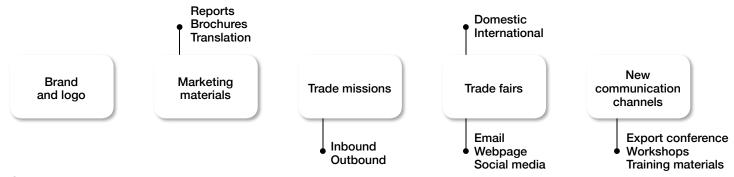
job numbers. The goal of the SCFC's marketing program is to develop current and new markets for the state's forest resources and to increase export volume. We do this by offering research of marketing intelligence, targeted advertisement and promotion, market entry and expansion assistance, and education.

Objectives

- · Assess market needs/barriers
- Develop marketing information and trade contacts to improve demand for SC forest products
- Provide company-specific assistance for locating sources of raw materials or manufactured products from SC producers
- Disseminate database on primary and secondary processors market and promote South Carolina forest product commodities for international trade

Elements of our marketing program

- Background research: state's forest products industry status
- Marketing research: marketing intelligence on current and new markets
- Promotion and sales assistance:



Other services and resources

Assistance is provided for forest/wood products and related business development. In addition, trade development activities are carried out to increase markets for South Carolina wood products.

- Forest products mill directory and maps
- Wood product business location or expansion assistance
- International trade information and assistance
- Forest Inventory & Analysis (FIA) reports, statewide and customized
- Timber Products Output (TPO) reports
- Sources of supply

